PERGAMON

Journal of Quantitative Spectroscopy & Radiative Transfer 70 (2001) III–VII

Journal of Quantitative Spectroscopy & Radiative Transfer

www.elsevier.com/locate/jqsrt

List of Contents

NUMBER 1

Note
C. Cecchi-Pestellini, L. Barletti, A. Belleni-Morante and **S. Aiello** — 1 A kinetic model for dust coagulation

I.R. Al'Miev, S.J. Rose and **J.S. Wark** — 11 Further simulations of the gain in a K XIX/Cl XVII resonantly photopumped X-ray Laser

D.A. Knoll, W.J. Rider and **G.L. Olson** — 25 Nonlinear convergence, accuracy, and time step control in nonequilibrium radiation diffusion

C. Yildiz — 37 Calculation of the albedo and transmission in a slab with a specified isotropic scattering using the F_N method

A. Elghazaly — 47 Radiation transfer in semi-infinite polarized medium

M.Ç. Güleçyüz, A. Kaşkaş and **C. Tezcan** — 55 The singular eigenfunction analysis of the third form transport equation using half-range orthogonality relations: the half-space problems

D. Nikolić, Z. Mijatović, S. Djurović, R. Kobilarov and **N. Konjević** — 67 Deconvolution of plasma broadened non-hydrogenic neutral atom lines

G. Bal and **M. Moscoso** — 75 Theoretical and numerical analysis of polarization for time-dependent radiative transfer equations

G. Moreau, J. Boissoles, R.Le Doucen, C. Boulet, R.H. Tipping and **Q. Ma** — 99 Metastable dimer contributions to the collision-induced fundamental absorption spectra of N_2 and O_2 pairs

D.S. Miller, F. Graziani and **G. Rodrigue** — 115 Benchmarks and models for time-dependent grey radiation transport with material temperature in binary stochastic media

PII: S0022-4073(01)00117-0

NUMBER 2

A. Asfaw 129 A fast method of modeling spectral lines

S. Havemann and **A.J. Baran** 139 Extension of T-matrix to scattering of electromagnetic plane waves by non-axisymmetric dielectric particles: application to hexagonal ice cylinders

P. Teulet, J.P. Sarrette and **A.M. Gomes** 159 Collisional–radiative modelling of one- and two-temperature air and air-sodium plasmas at atmospheric pressure with temperatures of 2000–12 000 K

J.R. Almandos, R. Sarmiento, M. Raineri, F. Bredice and **M. Gallardo** 189 Weighted oscillator strengths and lifetimes for Xe VI spectrum

M.A. Abdou 195 On the solution of ion transport equation

L.H. Liu and **J. Jiang** 207 Inverse radiation problem for reconstruction of temperature profile in axisymmetric free flames

A. Pardo and **A.H. Pardo** 217 Laser-induced irradiance fluorescence (LIIF) of molecular sodium excited with the 4727 Å Ar^+ laser line

C.F. Segatto, M.T. Vilhena and **L.S.S. Tavares** 227 The determination of radiant parameters by the LTS_N method

F. Borghese, P. Denti, R. Saija, M.A. Iatì and **O.I. Sindoni** 237 Optical properties of a dispersion of anisotropic particles with non-randomly distributed orientations. The case of atmospheric ice crystals

Note

W. Zeqing, Z. Benai and **Q. Yubo** 253 Resonant photoionization for average ions

Erratum

C. Levoni, E. Cattani, M. Cervino, R. Guzzi, W. Di Nicolantonio and **F. Torricella** 259 Erratum to "Effectiveness of the MS-method for computation of the intensity field reflected by a multi-layer plane-parallel atmosphere" [JQSRT 69 (5) (2001) 635–650]

NUMBER 3

A. Quirantes and **A.V. Delgado** 261 Scattering cross sections of randomly oriented coated spheroids

J. Jiménez-Mier 273 An approximation to the plasma dispersion function

Z. Djurić and **A.A. Mihajlov** 285 The influence of chemi-recombination and chemi-ionization processes on kinetics of non-equilibrium helium plasma

C.E. Siewert and **D. Valougeorgis** 307 The temperature-jump problem for a mixture of two gases

C.E. Siewert 321 Couette flow for a binary gas mixture

R. Durak, Y. Özdemir and **Y. Şahin** 333 Measurement of $K\alpha$ to $L\alpha$ and $K\beta$ to $L\beta$ intensity ratios of seven elements in the atomic number range $56 \leq Z \leq 66$ using photoionization at 59.54 keV

P.B. Abdallah, A. Charette and **V. Le Dez** 341 Influence of a spatial variation of the thermo-optical constants on the radiative transfer inside an absorbing–emitting semi-transparent sphere

Note

H. Zhang and **G.-Y. Shi** 367 An improved approach to diffuse radiation

NUMBER 4–6

G. Videen, Q. Fu and **P. Chýlek** 373 *Preface*

N.V. Shepelevich, I.V. Prostakova and **V.N. Lopatin** 375 Light-scattering by optically soft randomly oriented spheroids

F. González, G. Videen, P.J. Valle, J.M. Saiz, J.L. de la Peña and **F. Moreno** 383 Light scattering computational methods for particles on substrates

Y.-l. Xu and **B.Å.S. Gustafson** 395 A generalized multiparticle Mie-solution: further experimental verification

Y.A. Eremin, J.C. Stover and **N.V. Grishina** 421 Discrete sources method for light scattering analysis from 3D asymmetrical features on a substrate

I. Gurvich, N. Shiloah and **M. Kleiman** 433 Calculations of the Mie scattering coefficients for multi-layered particles with large size parameters

D.W. Mackowski 441 An effective medium method for calculation of the T matrix of aggregated spheres

N.T. Zakharova and **M.I. Mishchenko** 465 Scattering by randomly oriented thin ice disks with moderate equivalent-sphere size parameters

P. Yang, B.-C. Gao, B.A. Baum, Y.X. Hu, W.J. Wiscombe, S.-C. Tsay, D.M. Winker and **S.L. Nasiri** 473 Radiative properties of cirrus clouds in the infrared (8–13 μm) spectral region

A.J. Baran, P.N. Francis, S. Havemann and **P. Yang** 505 A study of the absorption and extinction properties of hexagonal ice columns and plates in random and preferred orientation, using exact T-matrix theory and aircraft observations of cirrus

K. Chamaillard and **J.-P.J. Lafon** 519 Statistical approach of the effects of roughness on the polarization of light scattered by dust grains

S. Kaasalainen, K. Muinonen and **J. Piironen** 529 Comparative study on opposition effect of icy solar system objects

U.K. Krieger and **C. Braun** 545 Light-scattering intensity fluctuations in single aerosol particles during deliquescence

M. Mujat and **A. Dogariu** 555 Measurements of structure-induced polarization features in forward scattering from collections of cylindrical fibers

Y.-X. Hu, D. Winker, P. Yang, B. Baum, L. Poole and **L. Vann** 569 Identification of cloud phase from PICASSO-CENA lidar depolarization: a multiple scattering sensitivity study

H. Kimura 581 Light-scattering properties of fractal aggregates: numerical calculations by a superposition technique and the discrete-dipole approximation

J. Klačka and **M. Kocifaj** 595 Motion of nonspherical dust particle under the action of electromagnetic radiation

L. Kolokolova and **B.Å.S. Gustafson** 611 Scattering by inhomogeneous particles: microwave analog experiments and comparison to effective medium theories

T.A. Nieminen, H. Rubinsztein-Dunlop and **N.R. Heckenberg** 627 Calculation and optical measurement of laser trapping forces on non-spherical particles

T. Nousiainen, K. Muinonen, J. Avelin and **A. Sihvola** 639 Microwave backscattering by nonspherical ice particles at 5.6 GHz using second-order perturbation series

A. Doicu and **T. Wriedt** 663 T-matrix method for electromagnetic scattering from scatterers with complex structure

J.-C. Auger, B. Stout, R.G. Barrera and **F. Curiel** 675 Scattering properties of rutile pigments located eccentrically within microvoids

D.J.W. Geldart and **P. Chýlek** 697 Absorption of solar radiation by charged water droplets

I.W. Sudiarta and **P. Chylek** 709 Mie scattering efficiency of a large spherical particle embedded in an absorbing medium

R. Schuh and **T. Wriedt** 715 Computer programs for light scattering by particles with inclusions

Q. Fu and **W. Sun** 725 Retrieval of cirrus particle sizes using a split-window technique: a sensitivity study

W. Sun and **Q. Fu** 737 Anomalous diffraction theory for randomly oriented nonspherical particles: a comparison between original and simplified solutions

B.M. Nebeker, J.L. de la Peña and **E.D. Hirleman** 749 Comparisons of the discrete-dipole approximation and modified double interaction model methods to predict light scattering from small features on surfaces

D.L. Mitchell, W.P. Arnott, C. Schmitt, A.J. Baran, S. Havemann and **Q. Fu** 761 Photon tunneling contributions to extinction for laboratory grown hexagonal columns

A.G. Simão, L.G. Guimarães and **G. Videen** 777 A comparative study in resonant light scattering between spherical and cylindrical dielectric hosts with a metallic inclusion

K. Muinonen, D. Stankevich, Y.G. Shkuratov, S. Kaasalainen and **J. Piironen** 787 Shadowing effect in clusters of opaque spherical particles

M.I. Mishchenko 811 Radiation force caused by scattering, absorption, and emission of light by nonspherical particles

L. Liu and **M.I. Mishchenko** 817 Constraints on PSC particle microphysics derived from lidar observations